

CLAIMS

What is claimed is:

1. An intervertebral spacing implant system comprising:
a spacing member adapted for implanting between adjacent
5 intervertebral bodies of a human spine, said spacing member
comprising an external, concavo-convex contour with respect to
one dimension of said spacing member, said spacing member
further comprising a length between a first end and a second
end, and a width, said length having a greater dimension than
10 said width;

positioning means for enabling a surgeon to adjust a
position of the spacing member when said spacing member
resides between adjacent intervertebral bodies, said
positioning means comprising a sheath member, a rod member
15 slidably insertable into the sheath member, and a means for
releasably attaching the rod member to the first end of the
spacing member,

wherein said sheath member is confined to a size about
the rod member sufficient to prevent the spacing member from
20 entering the sheath member, and such that an end of the sheath
member abuts the first end of the spacing member when the rod
member is attached to the first end of the spacing member, to
provide stability for positioning the spacing member.

2. The intervertebral spacing implant system of claim 1,
wherein the rod member has a longer length than the sheath
member, such that a proximal portion of the rod member
protrudes from the sheath member when said rod member resides
5 within said sheath member and is attached to the spacing
member.

3. The intervertebral spacing implant system of claim 1,
wherein the means for releasably attaching the rod member to
10 the spacing member further comprises a threaded engagement.

4. The intervertebral spacing implant system of claim 3,
wherein the means for releasably attaching the rod member to
the spacing member further comprises a female threaded recess
15 formed in the spacing member, and wherein the rod member
comprises a male threaded distal end having a size and
configuration sufficient to permit threaded engagement between
said male threaded distal end of the rod member and the female
threaded recess formed in the spacing member.

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5. The intervertebral spacing implant system of claim 1,
wherein the sheath member is removable from the rod member
when the rod member is attached to the spacing member.

6. The intervertebral spacing implant system of claim 1, wherein said sheath member contactably circumscribes a point of attachment of the rod member with the spacing member.

5 7. An intervertebral spacing implant system comprising:
a spacing member adapted for implanting between adjacent intervertebral bodies of a human spine, said spacing member comprising an external, concavo-convex contour with respect to one dimension of said spacing member, said spacing member
10 further comprising a length between a first end and a second end, and a width, said length having a greater dimension than said width;

positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member
15 resides between adjacent intervertebral bodies, said positioning means further comprising an attachment means for becoming releasably attached to the spacing member at a first area of attachment, and a stabilizing means for removably contacting the spacing member along a contact line that
20 surrounds the first area of attachment.

8. The intervertebral spacing implant system of claim 7, wherein the stabilizing means further comprises means for

contacting the spacing member along a circular contact line that circumscribes the first area of attachment, said circular contact line being disposed in a substantially co-axial orientation with respect to the first area of attachment.

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9. An intervertebral spacing implant system comprising:

a spacing member adapted for implanting between adjacent intervertebral bodies of a human spine, said spacing member comprising an external, non-porous, concavo-convex contour with respect to one dimension of said spacing member, said spacing member comprising a length between a first end and a second end, and a width, said length having a greater dimension than said width, said spacing member further comprising an upper surface having a plurality of spaced apart elongate recesses formed therein; and

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positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies, said positioning means comprising an elongate member, and a means for releasably attaching the elongate member to the first end of the spacing member.

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10. The intervertebral spacing implant system of claim 9, wherein said first end comprises complementary means for releasably attaching the elongate member to the spacing member.

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11. The intervertebral spacing implant system of claim 10, wherein said complementary means for releasably attaching the elongate member to the spacing member comprises a recess in said spacing member.

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12. The intervertebral spacing implant system of claim 11, wherein said complementary means for releasably attaching the elongate member to the spacing member comprises threads in said recess.

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13. The intervertebral spacing implant system of claim 9, wherein said elongate member comprises a sheath member and a rod member slidably insertable into the sheath member.

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14. The intervertebral spacing implant system of claim 13, wherein the rod member has a longer length than the sheath member, such that a proximal portion of the rod member protrudes from the sheath member when said rod member resides

within said sheath member and is attached to the spacing member.

15. The intervertebral spacing implant system of claim
5 9, wherein the means for releasably attaching the elongate member to the spacing member further comprises a threaded engagement.

16. The intervertebral spacing implant system of claim
10 15, wherein the means for releasably attaching the elongate member to the spacing member further comprises a female threaded recess formed in the spacing member, and wherein the elongate member comprises a male threaded distal end having a size and configuration sufficient to permit threaded
15 engagement between said male threaded distal end of the elongate member and the female threaded recess formed in the spacing member.

17. The intervertebral spacing implant system of claim
20 10, wherein said second end of said spacing member comprises a taper in a medial-lateral direction.

18. The intervertebral spacing implant system of claim 9, wherein said spacing member comprises a planar upper surface and a planar lower surface, said spacing member further comprising a solid configuration characterized by the absence of through holes between said planar upper surface and said planar lower surface.

19. An intervertebral spacing implant system comprising:
a spacing member adapted for implanting between adjacent intervertebral bodies of a human spine, said spacing member comprising an external, concavo-convex contour with respect to one dimension of said spacing member, said spacing member further comprising a length between a first end and a second end, and a width, said length having a greater dimension than said width, wherein said first end comprises attachment means for releasably attaching positioning means to said spacing member, and said second end comprises a taper such that a thickness of said second end is less than a thickness of said first end; and
positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies.

20. The intervertebral spacing implant system of claim 19, wherein said spacing member is non-porous.

21. The intervertebral spacing implant system of claim 5 19, wherein said attachment means for releasably attaching positioning means to said spacing member comprises a recess in said spacing member.

22. The intervertebral spacing implant system of claim 10 21, wherein said attachment means for releasably attaching positioning means to said spacing member further comprises threads in said recess.

23. The intervertebral spacing implant system of claim 15 19, wherein said positioning means comprises a sheath member and a rod member slidably insertable into the sheath member.

24. The intervertebral spacing implant system of claim 20 23, wherein the rod member has a longer length than the sheath member, such that a proximal portion of the rod member protrudes from the sheath member when said rod member resides within said sheath member and is attached to the spacing member.

25. The intervertebral spacing implant system of claim 19, wherein the attachment means for releasably attaching positioning means to said spacing member further comprises a threaded engagement.

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26. The intervertebral spacing implant system of claim 19, wherein the attachment means for releasably attaching positioning means to said spacing member further comprises a female threaded recess formed in the spacing member, and
10 wherein the positioning means comprises a male threaded distal end having a size and configuration sufficient to permit threaded engagement between said male threaded distal end of the elongate member and the female threaded recess formed in the spacing member.

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27. The intervertebral spacing implant system of claim 19, wherein said spacing member comprises a planar upper surface and a planar lower surface, said spacing member further comprising a solid configuration characterized by the
20 absence of through holes between said planar upper surface and said planar lower surface.

28. An intervertebral spacing implant system comprising:

a spacing member adapted for implanting between adjacent intervertebral bodies of a human spine, said spacing member having a cashew shape;

positioning means for enabling a surgeon to adjust a
5 position of the spacing member when said spacing member resides between adjacent intervertebral bodies, said positioning means comprising a sheath member, a rod member slidably insertable into the sheath member, and a means for releasably attaching the rod member to the first end of the
10 spacing member,

wherein said sheath member is confined to a size about the rod member sufficient to prevent the spacing member from entering the sheath member, and such that an end of the sheath member abuts the first end of the spacing member when the rod
15 member is attached to the first end of the spacing member, to provide stability for positioning the spacing member.

29. An intervertebral spacing implant system comprising:

a spacing member adapted for implanting between adjacent
20 intervertebral bodies of a human spine, said spacing member comprising an external, concavo-convex contour with respect to one dimension of said spacing member, said spacing member further comprising a length between a first end and a second

end, and a width, said length having a greater dimension than said width;

a sheath member, a rod member slidably insertable into the sheath member, and a threaded portion on the rod member
5 for releasably attaching the rod member to the first end of the spacing member for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies,

wherein said sheath member is confined to a size about
10 the rod member sufficient to prevent the spacing member from entering the sheath member, and such that an end of the sheath member abuts the first end of the spacing member when the rod member is attached to the first end of the spacing member, to provide stability for positioning the spacing member.

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30. An intervertebral spacing implant system comprising:

a spacing member adapted for implanting between adjacent intervertebral bodies of a human spine, said spacing member having a cashew shape;

20 positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies, said positioning means further comprising an attachment means for

becoming releasably attached to the spacing member at a first area of attachment, and a stabilizing means for removably contacting the spacing member along a contact line that surrounds the first area of attachment.

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31. An intervertebral spacing implant system comprising:
a spacing member adapted for implanting between adjacent intervertebral bodies of a human spine, said spacing member comprising an external, non-porous, concavo-convex contour
10 with respect to one dimension of said spacing member, said spacing member having a cashew shape, said spacing member further comprising an upper surface having a plurality of spaced apart elongate recesses formed therein; and

positioning means for enabling a surgeon to adjust a
15 position of the spacing member when said spacing member resides between adjacent intervertebral bodies, said positioning means comprising an elongate member, and a means for releasably attaching the elongate member to the first end of the spacing member.

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32. An intervertebral spacing implant system comprising:
a spacing member adapted for implanting between adjacent intervertebral bodies of a human spine, said spacing member

comprising an external, non-porous, concavo-convex contour with respect to one dimension of said spacing member, said spacing member comprising a length between a first end and a second end, and a width, said length having a greater
5 dimension than said width, said spacing member further comprising an upper surface having a plurality of spaced apart elongate recesses formed therein; and

a sheath member, a rod member slidably insertable into the sheath member, and a threaded portion on the rod member
10 for releasably attaching the rod member to the first end of the spacing member for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies.

15 33. An intervertebral spacing implant system comprising:
a spacing member adapted for implanting between adjacent intervertebral bodies of a human spine, said spacing member comprising an external, concavo-convex contour with respect to one dimension of said spacing member, said spacing member
20 further comprising a length between a first end and a second end, and a width, said length having a greater dimension than said width, wherein said first end comprises attachment means for releasably attaching positioning means to said spacing

member, and said second end comprises a taper, wherein said taper operates to reduce a thickness of said second end with respect to said first end without reducing a width of said second end; and

5 positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies.

34. The intervertebral spacing implant system of claim
10 19, wherein said positioning means comprises a rod member.

35. An intervertebral spacing implant system comprising:
a spacing member adapted for implanting between adjacent intervertebral bodies of a human spine, said spacing member
15 comprising an external, concavo-convex contour with respect to one dimension of said spacing member, said spacing member further comprising a length between a first end and a second end, and a width, wherein said first end comprises an opening for releasably attaching positioning means to said spacing
20 member; and

positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies, said

positioning means comprising a sheath member, a rod member slidably insertable into the sheath member, and a means for releasably attaching the rod member to the opening in the first end of the spacing member,

5 wherein said sheath member is confined to a size about the rod member sufficient to prevent the spacing member from entering the sheath member, and such that an end of the sheath member abuts the first end of the spacing member when the rod member is attached to the first end of the spacing member, to
10 provide stability for positioning the spacing member;

 wherein said sheath member is movable with respect to said rod in a direction away from said spacing member when said rod is attached to said spacing member; and

 wherein said sheath member contacts said spacing member
15 in a non-interference fit such that said sheath member can rotate with respect to said spacing member.

 36. The intervertebral spacing implant system of claim 35, wherein the means for releasably attaching the rod member
20 to the opening in the first end of the spacing member comprises threads on the end of the rod.

37. The intervertebral spacing implant system of claim 35, wherein the sheath member is removable from the rod member when the rod member is attached to the spacing member.

5 38. The intervertebral spacing implant system of claim 35, wherein the sheath member has a uniform cross section along a length of said sheath member.

39. The intervertebral spacing implant system of claim
10 35, wherein the rod member has a uniform cross section along a length of said rod member.

40. An intervertebral spacing implant comprising:
a spacing member adapted for implanting between adjacent
15 vertebral bodies of a human spine as a load-bearing replacement for a spinal disc, said spacing member further comprising an external, concavo-convex contour with respect to one dimension of said spacing member;

wherein the spacing member is solid and is either
20 inherently non-porous or is otherwise rendered non-porous, and is constructed from a rigid, non-resilient load-bearing material;

wherein the spacing member defines an imaginary arcuate centerline residing between opposing sides of the external concavo-convex contour of said spacing member, said arcuate centerline forming less than half a circle such that said
5 spacing member has a cashew shape having a uniform width along a majority length of the spacing member;

wherein the spacing member comprises an upper surface and a lower surface and a free insertion end, and wherein said spacing member includes a tapered portion such that said
10 spacing member becomes progressively thinner toward said free insertion end of said spacing member, wherein said tapered portion is characterized by at least one smooth surface that is a part of either said upper surface or said lower surface, said smooth surface having an absence of corners, points or
15 other abrupt edges; and

positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies.

20 41. An intervertebral spacing implant comprising:

a spacing member adapted for implanting between adjacent vertebral bodies of a human spine as a load-bearing replacement for a spinal disc, said spacing member further

comprising an external, concavo-convex contour with respect to one dimension of said spacing member;

wherein the spacing member is solid and is constructed from a rigid, non-resilient load-bearing material;

5 wherein the spacing member defines an imaginary arcuate centerline residing between opposing sides of the external concavo-convex contour of said spacing member, said arcuate centerline forming less than half a circle such that said spacing member has a cashew shape having a uniform width along
10 a majority length of the spacing member;

wherein the spacing member comprises an upper surface and a lower surface and a free insertion end, and wherein at least one of said upper surface and said lower surface comprises a male corner line, and wherein said spacing member includes a
15 tapered portion between said male corner line and said free insertion end of said spacing member such that said spacing member becomes progressively thinner from said male corner line toward said free insertion end of said spacing member, wherein said tapered portion is characterized by at least one
20 smooth surface that is a part of either said upper surface or said lower surface and extends from said male corner line to said free insertion end, said smooth surface having an absence of corners, points or other abrupt edges, and

positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies.

5 42. An intervertebral spacing implant comprising:

 a spacing member adapted for implanting between adjacent vertebral bodies of a human spine as a load-bearing replacement for a spinal disc, said spacing member further comprising an external, concavo-convex contour with respect to
10 one dimension of said spacing member;

 wherein the spacing member is either inherently non-porous or is otherwise rendered non-porous, and is constructed from a rigid, non-resilient load-bearing material;

 wherein the spacing member defines an imaginary arcuate
15 centerline residing between opposing sides of the external concavo-convex contour of said spacing member, said arcuate centerline forming less than half a circle such that said spacing member has a cashew shape having a uniform width along a majority length of the spacing member;

20 wherein the spacing member comprises an upper surface and a lower surface and a free insertion end, and wherein at least one of said upper surface and said lower surface comprises a male corner line, and wherein said spacing member includes a

tapered portion between said male corner line and said free insertion end of said spacing member such that said spacing member becomes progressively thinner from said male corner line toward said free insertion end of said spacing member, wherein said tapered portion is characterized by at least one smooth surface that is a part of either said upper surface or said lower surface and extends from said male corner line to said free insertion end, said smooth surface having an absence of corners, points or other abrupt edges; and

positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies.

43. An intervertebral spacing implant comprising:

a spacing member adapted for implanting between adjacent vertebral bodies of a human spine as a load-bearing replacement for a spinal disc, said spacing member further comprising an external, concavo-convex contour with respect to one dimension of said spacing member;

wherein the spacing member is solid and is either inherently non-porous or is otherwise rendered non-porous, and is constructed from a rigid, non-resilient load-bearing material;

wherein the spacing member defines an imaginary arcuate centerline residing between opposing sides of the external concavo-convex contour of said spacing member, said arcuate centerline forming less than half a circle such that said
5 spacing member has a uniform width along a majority length of the spacing member;

wherein the spacing member comprises an upper surface and a lower surface and a free insertion end, and wherein at least one of said upper surface and said lower surface comprises a
10 male corner line, and wherein said spacing member includes a tapered portion between said male corner line and said free insertion end of said spacing member such that said spacing member becomes progressively thinner from said male corner line toward said free insertion end of said spacing member,
15 wherein said tapered portion is characterized by at least one smooth surface that is a part of either said upper surface or said lower surface and extends from said male corner line to said free insertion end, said smooth surface having an absence of corners, points or other abrupt edges; and

20 positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies.

44. An intervertebral spacing implant comprising:

a spacing member adapted for implanting between adjacent vertebral bodies of a human spine as a load-bearing replacement for a spinal disc, said spacing member further
5 comprising an external, concavo-convex contour with respect to one dimension of said spacing member;

wherein the spacing member is solid and is either inherently non-porous or is otherwise rendered non-porous, and is constructed from a rigid, non-resilient load-bearing
10 material;

wherein the spacing has a cashew shape;

wherein the spacing member comprises an upper surface and a lower surface and a free insertion end, and wherein at least one of said upper surface and said lower surface comprises a
15 male corner line, and wherein said spacing member includes a tapered portion between said male corner line and said free insertion end of said spacing member such that said spacing member becomes progressively thinner from said male corner line toward said free insertion end of said spacing member,
20 wherein said tapered portion is characterized by at least one smooth surface that is a part of either said upper surface or said lower surface and extends from said male corner line to

said free insertion end, said smooth surface having an absence of corners, points or other abrupt edges; and

positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member
5 resides between adjacent intervertebral bodies.

45. An intervertebral spacing implant comprising:

a spacing member adapted for implanting between adjacent vertebral bodies of a human spine as a load-bearing
10 replacement for a spinal disc, said spacing member further comprising an external, concavo-convex contour with respect to one dimension of said spacing member;

wherein the spacing member is solid and is either inherently non-porous or is otherwise rendered non-porous;

15 wherein the spacing member defines an imaginary arcuate centerline residing between opposing sides of the external concavo-convex contour of said spacing member, said arcuate centerline forming less than half a circle such that said spacing member has a cashew shape having a uniform width along
20 a majority length of the spacing member;

wherein the spacing member comprises an upper surface and a lower surface and a free insertion end, and wherein at least one of said upper surface and said lower surface comprises a

male corner line, and wherein said spacing member includes a tapered portion between said male corner line and said free insertion end of said spacing member such that said spacing member becomes progressively thinner from said male corner line toward said free insertion end of said spacing member, wherein said tapered portion is characterized by at least one smooth surface that is a part of either said upper surface or said lower surface and extends from said male corner line to said free insertion end, said smooth surface having an absence of corners, points or other abrupt edges; and

positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies.

46. An intervertebral spacing implant comprising:
a spacing member adapted for implanting between adjacent vertebral bodies of a human spine as a load-bearing replacement for a spinal disc, said spacing member further comprising an external, concavo-convex contour with respect to one dimension of said spacing member;

wherein the spacing member is solid and is either inherently non-porous or is otherwise rendered non-porous, and

is constructed from a rigid, non-resilient load-bearing material;

wherein the spacing member defines an imaginary arcuate centerline residing between opposing sides of the external concavo-convex contour of said spacing member, said arcuate centerline forming less than half a circle such that said spacing member has a cashew shape having a uniform width along a majority length of the spacing member;

wherein the spacing member comprises an upper surface and a lower surface and a free insertion end, and wherein at least one of said upper surface and said lower surface comprises a male corner line, and wherein said spacing member includes a tapered portion between said male corner line and said free insertion end of said spacing member such that said spacing member becomes progressively thinner from said male corner line toward said free insertion end of said spacing member; and

positioning means for enabling a surgeon to adjust a position of the spacing member when said spacing member resides between adjacent intervertebral bodies.